Amended claims

1. A language transferring apparatus characterized in that said apparatus comprises: storing means of storing language rules which are obtained by training grammatical or semantic restriction rules for a word or a word string from a training database in which a sentence that is input in a form of speech or text, and that is a target language transference (hereinafter, such a sentence is referred to as a source language sentence, and a sentence that has undergone language transference correspondingly with it is referred to as a target language sentence) is paired with a target language sentence (hereinafter, such a database is referred to as a parallel-translation corpus);

a speech recognizing section which performs speech recognition on input speech by using the stored language rules, and which outputs a result of the recognition in a form of a sentence that is a target language transference; and

a language transferring section which transfers a sentence that is a target language transference, into a sentence that has undergone language transference, by using the same language rules as that used in said speech recognizing section.

2. A language transferring apparatus according to claim 1, characterized in that the language rules are produced

-1-

by dividing the sentence that is a target language transference, and the transferred sentence into portions in which both the sentences form semantic consistency (referred to as style-independent phrases), and making rules with separating language rules in the style-independent phrases from language rules between the style-independent phrases.

3. A language transferring apparatus according to claim 2, characterized in that the language rules are produced by making rules on grammatical or semantic rules in the style-independent phrases and concurrent or connection relationships between the style-independent phrases.

4. A language transferring apparatus according to claim 1, characterized in that said apparatus comprises a speech synthesizing section which performs speech synthesis on the sentence that has undergone language transference, by using a same language rules as that used in said language transferring section.

5. A language transferring apparatus according to any one of claims 1 to 4, characterized in that said apparatus comprises: a rule distance calculating section which, for a language rule group which is obtained by, among the language rules, bundling language rules of a same target language sentence as a same category, calculates an acoustic rule distance of the sentence that is a target language

transference of language rules contained in the language rule group; and

an optimum rule producing section which, in order to enhance a recognition level of speech recognition, optimizes the rule group by merging language rules having a similar calculated distance.

6. A language transference rule producing apparatus characterized in that said apparatus comprises:

a parallel-translation corpus;

a phrase extracting section which calculates a frequency of adjacency of words or parts of speech in a source language sentence and a target language sentence in said parallel-translation corpus, and couples words and parts of speech of a high frequency of adjacency to extract partial sentences in each of which semantic consistency is formed (hereinafter, such a partial sentence is referred to as a phrase);

a phrase determining section which, among the phrases extracted by said phrase extracting section, checks relationships between phrases of the source language and the target language with respect to a whole of a sentence to determine corresponding phrases; and

a phrase dictionary which stores the determined corresponding phrases,

said phrase dictionary is used when language

transference is performed, and the language transference, when a source language sentence is input, matches the input sentence with the corresponding phrases stored in said phrase dictionary, thereby performing language or style transference.

7. A language transference rule producing apparatus according to claim 6, characterized in that said phrase determining section checks concurrent relationships between phrases of the source language and the target language, thereby determines corresponding phrases.

8. A language transference rule producing apparatus according to claim 6, characterized in that said apparatus further has: a morphological analyzing section which transfers the source language sentence of the parallel-translation corpus into a word string; and

a word clastering section using part-of-speech which, by using a result of said morphological analyzing section, produces a parallel-translation corpus in which words of a part or all of the source language sentence and the target language sentence are replaced with speech part names, and

said phrase extracting section extracts phrases from the parallel-translation corpus in which words are replaced with speech part names by said word clastering section using part-of-speech.

9. A language transference rule producing apparatus

according to claim 8, characterized in that said apparatus has a parallel-translation word dictionary of the source language and the target language, and

said word clastering section using part-of-speech replaces words which are corresponded in said parallel-translation word dictionary and in which the source language is a content word, with speech part names.

10. A language transference rule producing apparatus according to claim 6, characterized in that said apparatus further has: a morphological analyzing section which transfers the source language sentence of the parallel-translation corpus into a word string; and

a semantic coding section which, by using a result of said morphological analyzing section, on a basis of a table in which words are classified while deeming words that are semantically similar, to be in a same class, and a same code is given to words in a same class (hereinafter, such a table is referred to as a classified vocabulary table), produces a parallel-translation corpus in which words of a part or all of the source language sentence and the target language sentence are replaced with codes of the classified vocabulary table, and

said phrase extracting section extracts phrases from the parallel-translation corpus in which words are replaced with codes by said semantic coding section.

11. A language transference rule producing apparatus according to claim 10, characterized in that said apparatus has a parallel-translation word dictionary of the source language and the target language, and

said semantic coding section replaces only words which are corresponded in the parallel-translation word dictionary, with semantic codes.

12. A language transference rule producing apparatus according to claim 6, characterized in that said phrase extracting section extracts phrases by using also a phrase definition table which previously stores word or sentence part strings that are wished to be preferentially deemed as a phrase, with pairing the source language and the target language.

13. A language transference rule producing apparatus according to any one of claims 6 to 12, characterized in that said apparatus has a perplexity calculating section which calculates a perplexity of a corpus, and

said phrase extracting section extracts phrases by using a frequency of adjacency of words or word classes, and the perplexity.

14. A program recording medium characterized in that said medium stores a program for causing a computer to execute functions of a whole or a part of components of the language transferring apparatus or the language transference rule

1 to 4

producing apparatus according to any one of claims 1 to 13.